

## SEQUENCE LISTING

<110> Hastings, Gregg et al.

<120> Novel Hyaluronan-Binding Proteins and Encoding Genes

<130> PF487

<140> Unassigned

<141> 1999-12-20

<150> 60/113,871

<151> 1998-12-23

<160> 37

<170> PatentIn Ver. 2.0

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gac ctg ccc aac ctg ggc cca ctt cga acc atg cat ggg acc ccc atc 4402  
 Asp Leu Pro Asn Leu Gly Pro Leu Arg Thr Met His Gly Thr Pro Ile  
                   1400                  1405                  1410

tct ttc tcc tgc agc cga acg cgg ccc ggt gag ctc atg gtg ggt gag 4450  
 Ser Phe Ser Cys Ser Arg Thr Arg Pro Gly Glu Leu Met Val Gly Glu  
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gat gat gct cgc att gtg cag cgg cac ttg ccc ttt gag ggt ggc ctg 4498  
 Asp Asp Ala Arg Ile Val Gln Arg His Leu Pro Phe Glu Gly Gly Leu  
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gcc tat ggc atc gac cag ctg ctg gag cca cct ggc ctt ggt gct cgc 4546  
 Ala Tyr Gly Ile Asp Gln Leu Leu Glu Pro Pro Gly Leu Gly Ala Arg  
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tgt gac cac ttt gag acc cgg ccc ctg cga ctg aac acc tgc agc atc 4594  
 Cys Asp His Phe Glu Thr Arg Pro Leu Arg Leu Asn Thr Cys Ser Ile  
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 Cys Gly Leu Glu Pro Pro Cys Pro Glu Gly Ser Gln Glu Gln Gly Ser  
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cct gag gcc tgc tgg cgc ttc tac ccg aag ttc tgg acg tcc cct ccg 4690  
 Pro Glu Ala Cys Trp Arg Phe Tyr Pro Lys Phe Trp Thr Ser Pro Pro  
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ctg cac tct ttg gga tta cgc agc gtc tgg gtc cac ccc agc ctt tgg 4738  
 Leu His Ser Leu Gly Leu Arg Ser Val Trp Val His Pro Ser Leu Trp  
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ggg agg ccc caa ggc ctg ggc agg ggc tgc cac cgc aat tgt gtc acc 4786  
 Gly Arg Pro Gln Gly Leu Gly Arg Gly Cys His Arg Asn Cys Val Thr  
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acc acc tgg aag ccc agc tgc tgc cct ggt cac tat ggc agt gag tgc 4834  
 Thr Thr Trp Lys Pro Ser Cys Cys Pro Gly His Tyr Gly Ser Glu Cys



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caa gct tgc cct ggc ggc ccc agc agc cct tgt agt gac cgt ggc gtg				4882
Gln Ala Cys Pro Gly Gly Pro Ser Ser Pro Cys Ser Asp Arg Gly Val	1560	1565	1570	
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Cys Met Asp Gly Met Ser Gly Ser Gly Gln Cys Leu Cys Arg Ser Gly	1575	1580	1585	
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Phe Ala Gly Thr Ala Cys Glu Leu Cys Ala Pro Gly Ala Phe Gly Pro	1590	1595	1600	
cat tgt caa gcc tgc cgc tgc act gtg cat ggc cgc tgt gat gag ggc				5026
His Cys Gln Ala Cys Arg Cys Thr Val His Gly Arg Cys Asp Glu Gly	1605	1610	1615	
ctt ggg ggc tct ggc tcc tgc ttc tgt gat gaa ggc tgg act ggg cca				5074
Leu Gly Gly Ser Gly Ser Cys Phe Cys Asp Glu Gly Trp Thr Gly Pro	1620	1625	1630	1635
cgc tgt gag gtg caa ctg gag ctg cag cct gtg tgt acc cca ccc tgt				5122
Arg Cys Glu Val Gln Leu Glu Leu Gln Pro Val Cys Thr Pro Pro Cys	1640	1645	1650	
gca ccc gag gct gtg tgc cgt gca ggc aac agc tgt gag tgc agc ctg				5170
Ala Pro Glu Ala Val Cys Arg Ala Gly Asn Ser Cys Glu Cys Ser Leu	1655	1660	1665	
ggc tat gaa ggg gat ggc cgt gtg tgt aca gtg gca gac ctg tgc cag				5218
Gly Tyr Glu Gly Asp Gly Arg Val Cys Thr Val Ala Asp Leu Cys Gln	1670	1675	1680	
gac ggg cat ggt ggc tgc agt gag cac gcc aac tgt agc cag gta gga				5266
Asp Gly His Gly Gly Cys Ser Glu His Ala Asn Cys Ser Gln Val Gly	1685	1690	1695	
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Thr Met Val Thr Cys Thr Cys Leu Pro Asp Tyr Glu Gly Asp Gly Trp	1700	1705	1710	1715
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Ser Cys Arg Ala Arg Asn Pro Cys Thr Asp Gly His Arg Gly Gly Cys	1720	1725	1730	
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Ser Glu His Ala Asn Cys Leu Ser Thr Gly Leu Asn Thr Arg Arg Cys	1735	1740	1745	
gag tgc cac gca ggc tac gta ggc gat gga ctg cag tgt ctg gag gag				5458
Glu Cys His Ala Gly Tyr Val Gly Asp Gly Leu Gln Cys Leu Glu Glu	1750	1755	1760	
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Ser Glu Pro Pro Val Asp Arg Cys Leu Gly Gln Pro Pro Pro Cys His	1765	1770	1775	
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Ser Asp Ala Met Cys Thr Asp Leu His Phe Gln Glu Lys Arg Ala Gly	
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Val Phe His Leu Gln Ala Thr Ser Gly Pro Tyr Gly Leu Asn Phe Ser	
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gag gct gag gcg gca tgc gaa gca cag gga gcc gtc ctt gct tca ttc	5650
Glu Ala Glu Ala Ala Cys Glu Ala Gln Gly Ala Val Leu Ala Ser Phe	
1815 1820 1825	
cct cag ctc tct gct gcc cag cag ctg ggc ttc cac ctg tgc ctc atg	5698
Pro Gln Leu Ser Ala Ala Gln Gln Leu Gly Phe His Leu Cys Leu Met	
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Gly Trp Leu Ala Asn Gly Ser Thr Ala His Pro Val Val Phe Pro Val	
1845 1850 1855	
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Ala Asp Cys Gly Asn Gly Arg Val Gly Ile Val Ser Leu Gly Ala Arg	
1860 1865 1870 1875	
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Lys Asn Leu Ser Glu Arg Trp Asp Ala Tyr Cys Phe Arg Val Gln Asp	
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Val Ala Cys Arg Cys Arg Asn Gly Phe Val Gly Asp Gly Ile Ser Thr	
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Cys Asn Gly Lys Leu Leu Asp Val Leu Ala Ala Thr Ala Asn Phe Ser	
1910 1915 1920	
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Thr Phe Tyr Gly Met Leu Leu Gly Tyr Ala Asn Ala Thr Gln Arg Gly	
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Leu Asp Phe Leu Asp Phe Leu Asp Asp Glu Leu Thr Tyr Lys Thr Leu	
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Phe Val Pro Val Asn Glu Gly Phe Val Asp Asn Met Thr Leu Ser Gly	
1960 1965 1970	
cca aac ttg gag ctg cat gcc tcc aac gcc acc ctc cta agt gcc aac	6130
Pro Asn Leu Glu Leu His Ala Ser Asn Ala Thr Leu Leu Ser Ala Asn	
1975 1980 1985	
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Ala Ser Gln Gly Lys Leu Leu Pro Ala His Ser Gly Leu Ser Leu Ile	
1990 1995 2000	
atc agt gac gca ggc cct gac aac agt tcc tgg gcc cct gtg gcc cca	6226
Ile Ser Asp Ala Gly Pro Asp Asn Ser Ser Trp Ala Pro Val Ala Pro	
2005 2010 2015	

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 Gly Thr Val Val Val Ser Arg Ile Ile Val Trp Asp Ile Met Ala Phe  
 2020 2025 2030 2035  
 aat ggc atc atc cat gct ctg gcc agc ccc ctc ctg gca ccc cca cag 6322  
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His Ile Leu Glu Asp Thr Arg Thr Gln Gln Thr Arg Arg Trp Trp Thr  
 50 55 60

Leu Ala Gly Gln Glu Ile Thr Val Thr Phe Asn Gln Phe Thr Lys Tyr  
 65 70 75 80  
 Ser Tyr Lys Tyr Lys Asp Gln Pro Gln Gln Thr Phe Asn Ile Tyr Lys  
 85 90 95  
 Ala Asn Asn Ile Ala Ala Asn Gly Val Phe His Val Val Thr Gly Leu  
 100 105 110  
 Arg Trp Gln Ala Pro Ser Gly Thr Pro Gly Asp Pro Lys Arg Thr Ile  
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 Gly Gln Ile Leu Ala Ser Thr Glu Ala Phe Ser Arg Phe Glu Thr Ile  
 130 135 140  
 Leu Glu Asn Cys Gly Leu Pro Ser Ile Leu Asp Gly Pro Gly Pro Phe  
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 Thr Val Phe Ala Pro Ser Asn Glu Ala Val Asp Ser Leu Arg Asp Gly  
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 Arg Leu Ile Tyr Leu Phe Thr Ala Gly Leu Ser Lys Leu Gln Glu Leu  
 180 185 190  
 Val Arg Tyr His Ile Tyr Asn His Gly Gln Leu Thr Val Glu Lys Leu  
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 Ile Ser Lys Gly Arg Ile Leu Thr Met Ala Asn Gln Val Leu Ala Val  
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 Asn Ile Ser Glu Glu Gly Arg Ile Leu Leu Gly Pro Glu Gly Val Pro  
 225 230 235 240  
 Leu Gln Arg Val Asp Val Met Ala Ala Asn Gly Val Ile His Met Leu  
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 Asp Gly Ile Leu Leu Pro Pro Thr Ile Leu Pro Ile Leu Pro Lys His  
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 Cys Ser Glu Glu Gln His Lys Ile Val Ala Gly Ser Cys Val Asp Cys  
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 Gln Ala Leu Asn Thr Ser Thr Cys Pro Pro Asn Ser Val Lys Leu Asp  
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 Ile Phe Pro Lys Glu Cys Val Tyr Ile His Asp Pro Thr Gly Leu Asn  
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 Val Leu Lys Lys Gly Cys Ala Ser Tyr Cys Asn Gln Thr Ile Met Glu  
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 Ile Gln Gly Asn Gly Ala Cys Leu Cys Phe Pro Asp Tyr Lys Gly Ile  
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Ala Cys His Ile Cys Ser Asn Pro Asn Lys His Gly Glu Gln Cys Gln  
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 Gly Tyr Gln Cys Ser Pro Ile Asp Pro Cys Arg Ala Gly Asn Gly Gly  
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 Cys His Gly Leu Glu Leu Glu Ala Asn Ala His Phe Ser Ile Phe Tyr  
 580 585 590  
 Gln Trp Leu Lys Ser Ala Gly Ile Thr Leu Pro Ala Asp Arg Arg Val  
 595 600 605  
 Thr Ala Leu Val Pro Ser Glu Ala Ala Val Arg Gln Leu Ser Pro Glu  
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 Asp Arg Ala Phe Trp Leu Gln Pro Arg Thr Leu Pro Asn Leu Val Arg  
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 Ala His Phe Leu Gln Gly Ala Leu Phe Glu Glu Glu Leu Ala Arg Leu  
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 Gly Gly Gln Glu Val Ala Thr Leu Asn Pro Thr Thr Arg Trp Glu Ile  
 660 665 670  
 Arg Asn Ile Ser Gly Arg Val Trp Val Gln Asn Ala Ser Val Asp Val  
 675 680 685  
 Ala Asp Leu Leu Ala Thr Asn Gly Val Leu His Ile Leu Ser Gln Val

690	695	700
Leu Leu Pro Pro Arg Gly Asp Val Pro Gly Gly Gln Gly Leu Leu Gln 705 710 715 720		
Gln Leu Asp Leu Val Pro Ala Phe Ser Leu Phe Arg Glu Leu Leu Gln 725 730 735		
His His Gly Leu Val Pro Gln Ile Glu Ala Ala Thr Ala Tyr Thr Ile 740 745 750		
Phe Val Pro Thr Asn Arg Ser Leu Glu Ala Gln Gly Asn Ser Ser His 755 760 765		
Leu Asp Ala Asp Thr Val Arg His His Val Val Leu Gly Glu Ala Leu 770 775 780		
Ser Met Glu Thr Leu Arg Lys Gly Gly His Arg Asn Ser Leu Leu Gly 785 790 795 800		
Pro Ala His Trp Ile Val Phe Tyr Asn His Ser Gly Gln Pro Glu Val 805 810 815		
Asn His Val Pro Leu Glu Gly Pro Met Leu Glu Ala Pro Gly Arg Ser 820 825 830		
Leu Ile Gly Leu Ser Gly Val Leu Thr Val Gly Ser Ser Arg Cys Leu 835 840 845		
His Ser His Ala Glu Ala Leu Arg Glu Lys Cys Val Asn Cys Thr Arg 850 855 860		
Arg Phe Arg Cys Thr Gln Gly Phe Gln Leu Gln Asp Thr Pro Arg Lys 865 870 875 880		
Ser Cys Val Tyr Arg Ser Gly Phe Ser Phe Ser Arg Gly Cys Ser Tyr 885 890 895		
Thr Cys Ala Lys Lys Ile Gln Val Pro Asp Cys Cys Pro Gly Phe Phe 900 905 910		
Gly Thr Leu Cys Glu Pro Cys Pro Gly Gly Leu Gly Gly Val Cys Ser 915 920 925		
Gly His Gly Gln Cys Gln Asp Arg Phe Leu Gly Ser Gly Glu Cys His 930 935 940		
Cys His Glu Gly Phe His Gly Thr Ala Cys Glu Val Cys Glu Leu Gly 945 950 955 960		
Arg Tyr Gly Pro Asn Cys Thr Gly Val Cys Asp Cys Ala His Gly Leu 965 970 975		
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Trp Gln Gly Leu Arg Cys Asp Gln Lys Ile Thr Ser Pro Gln Cys Pro 995 1000 1005		

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Cys Leu Met Gly Trp Leu Ala Asn Gly Ser Thr Ala His Pro Val Val 1845 1850 1855		
Phe Pro Val Ala Asp Cys Gly Asn Gly Arg Val Gly Ile Val Ser Leu 1860 1865 1870		
Gly Ala Arg Lys Asn Leu Ser Glu Arg Trp Asp Ala Tyr Cys Phe Arg 1875 1880 1885		
Val Gln Asp Val Ala Cys Arg Cys Arg Asn Gly Phe Val Gly Asp Gly 1890 1895 1900		
Ile Ser Thr Cys Asn Gly Lys Leu Leu Asp Val Leu Ala Ala Thr Ala 905 1910 1915 1920		
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Gln Arg Gly Leu Asp Phe Leu Asp Phe Leu Asp Asp Glu Leu Thr Tyr 1940 1945 1950		

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Tyr Val Lys Gly Asn Cys Gly Gly Lys Thr Gly Asp Tyr Gly Arg Asn

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Val	Thr	Asp	Lys	Arg	Lys	Ser	Gly	Asn	Tyr	Asp	Asn	Cys	Tyr	Trp	His
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Thr	Ala	Gly	Gly	Lys	Tyr	Val	Ala	Met	Asp	Val	Ser	Lys	Ser	Ser	Gly
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Asp	Tyr	Glu	Gly	Asp	Gly	Trp	Ser	Cys	Arg	Ala	Arg	Asn	Pro	Cys	Thr	
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   65                      70                      75                      80  
  
 Asp Ala Met Cys Thr Asp Leu His Phe Gln Glu Lys Arg Ala Gly Val  
                                  85                      90                      95  
  
 Phe His Leu Gln Ala Thr Ser Gly Pro Tyr Gly Leu Asn Phe Ser Glu

1158  
 1206  
 1254  
 1302  
 1350  
 1398  
 1454  
 1514  
 1522

100	105	110
Ala Glu Ala Ala Cys Glu Ala Gln Gly Ala Val Leu Ala Ser Phe Pro 115	120	125
Gln Leu Ser Ala Ala Gln Gln Leu Gly Phe His Leu Cys Leu Met Gly 130	135	140
Trp Leu Ala Asn Gly Ser Thr Ala His Pro Val Val Phe Pro Val Ala 145	150	155
Asp Cys Gly Asn Gly Arg Val Gly Ile Val Ser Leu Gly Ala Arg Lys 165	170	175
Asn Leu Ser Glu Arg Trp Asp Ala Tyr Cys Phe Arg Val Gln Asp Val 180	185	190
Ala Cys Arg Cys Arg Asn Gly Phe Val Gly Asp Gly Ile Ser Thr Cys 195	200	205
Asn Gly Lys Leu Leu Asp Val Leu Ala Ala Thr Ala Asn Phe Ser Thr 210	215	220
Phe Tyr Gly Met Leu Leu Gly Tyr Ala Asn Ala Thr Gln Arg Gly Leu 225	230	235
Asp Phe Leu Asp Phe Leu Asp Asp Glu Leu Thr Tyr Lys Thr Leu Phe 245	250	255
Val Pro Val Asn Glu Gly Phe Val Asp Asn Met Thr Leu Ser Gly Pro 260	265	270
Asn Leu Glu Leu His Ala Ser Asn Ala Thr Leu Leu Ser Ala Asn Ala 275	280	285
Ser Gln Gly Lys Leu Leu Pro Ala His Ser Gly Leu Ser Leu Ile Ile 290	295	300
Ser Asp Ala Gly Pro Asp Asn Ser Ser Trp Ala Pro Val Ala Pro Gly 305	310	315
Thr Val Val Val Ser Arg Ile Ile Val Trp Asp Ile Met Ala Phe Asn 325	330	335
Gly Ile Ile His Ala Leu Ala Ser Pro Leu Leu Ala Pro Pro Gln Pro 340	345	350
Gln Ala Val Leu Ala Xaa Glu Ala Pro Pro Val Ala Ala Gly Val Gly 355	360	365
Ala Val Leu Ala Ala Gly Ala Leu Leu Gly Leu Val Ala Gly Ala Leu 370	375	380
Tyr Leu Arg Ala Arg Gly Lys Pro Met Gly Phe Gly Phe Ser Ala Phe 385	390	395
Gln Ala Glu Asp Asp Ala Asp Asp Xaa Phe Ser Pro Trp Gln Glu Gly 405	410	415

100 105 110  
 115 120 125  
 130 135 140  
 145 150 155 160  
 165 170 175  
 180 185 190  
 195 200 205  
 210 215 220  
 225 230 235 240  
 245 250 255  
 260 265 270  
 275 280 285  
 290 295 300  
 305 310 315 320  
 325 330 335  
 340 345 350  
 355 360 365  
 370 375 380  
 385 390 395 400  
 405 410 415

Thr Asn Pro Xaa Leu Xaa Xaa Val Pro Asn Pro Val Phe Gly Ser Asp  
420 425 430

Thr Phe Cys Glu Pro Phe Asp Asp Ser Leu Leu Glu Glu Asp Phe Pro  
435 440 445

Asp Thr Gln Arg Ile Leu Thr Val Lys  
450 455

<210> 6

<211> 193

<212> PRT

<213> Homo sapiens

<400> 6

Met Tyr Trp Asp Thr Gly Trp Gly Lys Asp Gly His Asn Ser Trp Arg  
1 5 10 15

Ala Ala Gly Val Tyr His Arg Ala Arg Ser Gly Lys Tyr Lys Thr Tyr  
20 25 30

Ala Ala Lys Ala Val Cys Gly Gly His Ala Thr Tyr Lys Ala Ala Arg  
35 40 45

Lys Gly His Val Cys Ala Ala Gly Trp Met Ala Lys Gly Arg Val Gly  
50 55 60

Tyr Val Lys Gly Asn Cys Gly Gly Lys Thr Gly Asp Tyr Gly Arg Asn  
65 70 75 80

Arg Ser Arg Trp Asp Ala Tyr Cys Tyr Asn His Ala Lys Cys Gly Gly  
85 90 95

Val Thr Asp Lys Arg Lys Ser Gly Asn Tyr Asp Asn Cys Tyr Trp His  
100 105 110

Arg Lys Tyr Gly Arg His Ser Asp Asp Asp Asp Gly Cys Ala Asp Tyr  
115 120 125

Val Tyr Asp Ser Tyr Asp Asp Val His Gly Val Gly Arg Tyr Cys Gly  
130 135 140

Asp Asp Asp Ser Thr Gly Asn Val Met Thr Lys Ser Asp Ala Ser Val  
145 150 155 160

Thr Ala Gly Gly Lys Tyr Val Ala Met Asp Val Ser Lys Ser Ser Gly  
165 170 175

Lys Asn Thr Ser Thr Thr Ser Thr Gly Asn Lys Asn Ala Gly Arg Ser  
180 185 190

His

<210> 7

<211> 985

<212> DNA



<213> Homo sapiens

<220>

<221> CDS

<222> (118)..(984)

<220>

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<220>

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<222> (51)

<223> n equals a, t, g or c

<220>

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<222> (521)

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<222> (564)

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<222> (933)

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<222> (945)

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<222> (951)

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<220>

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<223> n equals a, t, g or c

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gccacgcgt cgcaccgga cagctcgcg ccccnagag ctctagccgt ngaggagctg 60

ctctggggacg	tttgcccttg	ggccccagcc	tgccccgggt	caccctggca	tgaggag	117
atg ggc ctg ttg ctc ctg gtc cca ttg ctc ctg ctg ccc ggc tcc tac	165					
Met Gly Leu Leu Leu Leu Val Pro Leu Leu Leu Leu Pro Gly Ser Tyr						
1 5 10 15						
gga ctg ccc ttc tac tac ggc ttc tac tac tcc aac agc gcc aac gac	213					
Gly Leu Pro Phe Tyr Tyr Gly Phe Tyr Tyr Ser Asn Ser Ala Asn Asp						
20 25 30						
cag aac cta ggc aac ggt cat ggc aaa gac cta cnt aat gga gtg aag	261					
Gln Asn Leu Gly Asn Gly His Gly Lys Asp Leu Xaa Asn Gly Val Lys						
35 40 45						
ctg gtg gtg gag aca ccc gag gag acc ctg ttc acc tac caa ggg gcc	309					
Leu Val Val Glu Thr Pro Glu Glu Thr Leu Phe Thr Tyr Gln Gly Ala						
50 55 60						
agt gtg atc ctg ccc tgc cgc tac cgc tac gag ccg gcc ctg gtc tcc	357					
Ser Val Ile Leu Pro Cys Arg Tyr Arg Tyr Glu Pro Ala Leu Val Ser						
65 70 75 80						
ccg cgg cgt gtg cgt gtc aaa tgg tgg aag ctg tcg gag aac ggg gcc	405					
Pro Arg Arg Val Arg Val Lys Trp Trp Lys Leu Ser Glu Asn Gly Ala						
85 90 95						
cca gag aag gac gtg ctg gtg gcc atc ggg ctg agg cac cgc tcc ttt	453					
Pro Glu Lys Asp Val Leu Val Ala Ile Gly Leu Arg His Arg Ser Phe						
100 105 110						
ggg gac tac caa ggc cgc gtg cac ctg cgg cag gac aaa gag cat gac	501					
Gly Asp Tyr Gln Gly Arg Val His Leu Arg Gln Asp Lys Glu His Asp						
115 120 125						
gtc tcg ntg gag atc cag gnt ctg cgg ctg gag gac tat ggg cgt tac	549					
Val Ser Xaa Glu Ile Gln Xaa Leu Arg Leu Glu Asp Tyr Gly Arg Tyr						
130 135 140						
cgc tgt gag gtc atn gac ggg ctg gag gat gaa agc ggt ctg gtg gag	597					
Arg Cys Glu Val Xaa Asp Gly Leu Glu Asp Glu Ser Gly Leu Val Glu						
145 150 155 160						
ctg gag ctg cgg ggt gtg gtc ttt cct tac cag tcc ccc aac ggg cgc	645					
Leu Glu Leu Arg Gly Val Val Phe Pro Tyr Gln Ser Pro Asn Gly Arg						
165 170 175						
tac cag ttc aac ttc cac gag ggc cag cag gtc tgt gca gag cag gct	693					
Tyr Gln Phe Asn Phe His Glu Gly Gln Gln Val Cys Ala Glu Gln Ala						
180 185 190						
gcg gtg gtg gcc tcc ttt gag cag ctc ttc cgg gcc tgg gag gag ggc	741					
Ala Val Val Ala Ser Phe Glu Gln Leu Phe Arg Ala Trp Glu Glu Gly						
195 200 205						
ctg gac tgg tgc aac gcg ggc tgg ctg cag gat gcc acg gtg cag tac	789					
Leu Asp Trp Cys Asn Ala Gly Trp Leu Gln Asp Ala Thr Val Gln Tyr						
210 215 220						
ccc atc atg ttg ccc cgg cag ccc tgc ggt ggc ccg gac ctg gca cct	837					

Pro Ile Met Leu Pro Arg Gln Pro Cys Gly Gly Pro Asp Leu Ala Pro  
 225 230 235 240

ggc gtg cga agc tac ggc ccc cgc cac cgc cgc ctg cac cgc tat gat 885  
 Gly Val Arg Ser Tyr Gly Pro Arg His Arg Arg Leu His Arg Tyr Asp  
 245 250 255

gta ttc tgc ttc gct act gcc ctc arg ggg cgg gtg tac tac ctg gan 933  
 Val Phe Cys Phe Ala Thr Ala Leu Xaa Gly Arg Val Tyr Tyr Leu Xaa  
 260 265 270

cac cct gag aan ctg acn ctg aca naa gca agg gaa gcc tgc caa gaa 981  
 His Pro Glu Xaa Leu Xaa Leu Thr Xaa Ala Arg Glu Ala Cys Gln Glu  
 275 280 285

aaa t 985  
 Lys

<210> 8  
 <211> 289  
 <212> PRT  
 <213> Homo sapiens

<400> 8  
 Met Gly Leu Leu Leu Leu Val Pro Leu Leu Leu Leu Pro Gly Ser Tyr  
 1 5 10 15

Gly Leu Pro Phe Tyr Tyr Gly Phe Tyr Tyr Ser Asn Ser Ala Asn Asp  
 20 25 30

Gln Asn Leu Gly Asn Gly His Gly Lys Asp Leu Xaa Asn Gly Val Lys  
 35 40 45

Leu Val Val Glu Thr Pro Glu Glu Thr Leu Phe Thr Tyr Gln Gly Ala  
 50 55 60

Ser Val Ile Leu Pro Cys Arg Tyr Arg Tyr Glu Pro Ala Leu Val Ser  
 65 70 75 80

Pro Arg Arg Val Arg Val Lys Trp Trp Lys Leu Ser Glu Asn Gly Ala  
 85 90 95

Pro Glu Lys Asp Val Leu Val Ala Ile Gly Leu Arg His Arg Ser Phe  
 100 105 110

Gly Asp Tyr Gln Gly Arg Val His Leu Arg Gln Asp Lys Glu His Asp  
 115 120 125

Val Ser Xaa Glu Ile Gln Xaa Leu Arg Leu Glu Asp Tyr Gly Arg Tyr  
 130 135 140

Arg Cys Glu Val Xaa Asp Gly Leu Glu Asp Glu Ser Gly Leu Val Glu  
 145 150 155 160

Leu Glu Leu Arg Gly Val Val Phe Pro Tyr Gln Ser Pro Asn Gly Arg  
 165 170 175

Tyr Gln Phe Asn Phe His Glu Gly Gln Gln Val Cys Ala Glu Gln Ala

180	185	190
Ala Val Val Ala Ser Phe Glu Gln Leu Phe Arg Ala Trp Glu Glu Gly		
195	200	205
Leu Asp Trp Cys Asn Ala Gly Trp Leu Gln Asp Ala Thr Val Gln Tyr		
210	215	220
Pro Ile Met Leu Pro Arg Gln Pro Cys Gly Gly Pro Asp Leu Ala Pro		
225	230	235
Gly Val Arg Ser Tyr Gly Pro Arg His Arg Arg Leu His Arg Tyr Asp		
	245	250
Val Phe Cys Phe Ala Thr Ala Leu Xaa Gly Arg Val Tyr Tyr Leu Xaa		
	260	265
His Pro Glu Xaa Leu Xaa Leu Thr Xaa Ala Arg Glu Ala Cys Gln Glu		
	275	285

Lys

<210> 9  
 <211> 355  
 <212> PRT  
 <213> Homo sapiens

<400> 9  
 Met Thr Ser Leu Leu Phe Leu Val Leu Ile Ser Val Cys Trp Ala Glu  
 1 5 10 15  
 Pro His Pro Asp Asn Ser Ser Leu Glu His Glu Arg Ile Ile His Ile  
 20 25 30  
 Gln Glu Glu Asn Gly Pro Arg Leu Leu Val Val Ala Glu Gln Ala Lys  
 35 40 45  
 Ile Phe Ser Gln Arg Gly Gly Asn Val Thr Leu Pro Cys Lys Phe Tyr  
 50 55 60  
 His Glu His Thr Ser Thr Ala Gly Ser Gly Thr His Lys Ile Arg Val  
 65 70 75 80  
 Lys Trp Thr Lys Leu Thr Ser Asp Tyr Leu Lys Glu Val Asp Val Phe  
 85 90 95  
 Val Ala Met Gly His His Arg Lys Ser Tyr Gly Lys Tyr Gln Gly Arg  
 100 105 110  
 Val Phe Leu Arg Glu Ser Ser Glu Asn Asp Ala Ser Leu Ile Ile Thr  
 115 120 125  
 Asn Ile Met Leu Glu Asp Tyr Gly Arg Tyr Lys Cys Glu Val Ile Glu  
 130 135 140  
 Gly Leu Glu Asp Asp Thr Ala Val Val Ala Leu Asn Leu Glu Gly Val  
 145 150 155 160

Val Phe Pro Tyr Ser Pro Arg Leu Gly Arg Tyr Asn Leu Asn Phe His  
 165 170 175  
 Glu Ala Gln Gln Ala Cys Leu Asp Gln Asp Ser Ile Ile Ala Ser Phe  
 180 185 190  
 Asp Gln Leu Tyr Glu Ala Trp Arg Ser Gly Leu Asp Trp Cys Asn Ala  
 195 200 205  
 Gly Trp Leu Ser Asp Gly Ser Val Gln Tyr Pro Ile Thr Lys Pro Arg  
 210 215 220  
 Glu Pro Cys Gly Gly Lys Asn Thr Val Pro Gly Val Arg Asn Tyr Gly  
 225 230 235 240  
 Phe Trp Asp Lys Glu Arg Ser Arg Tyr Asp Val Phe Cys Phe Thr Ser  
 245 250 255  
 Asn Phe Asn Gly Arg Phe Tyr Tyr Leu Ile His Pro Thr Lys Leu Thr  
 260 265 270  
 Tyr Asp Glu Ala Val Gln Ala Cys Leu Lys Asp Gly Ala Gln Ile Ala  
 275 280 285  
 Lys Val Gly Gln Ile Phe Ala Ala Trp Lys Leu Leu Gly Tyr Asp Arg  
 290 295 300  
 Cys Asp Ala Gly Trp Leu Ala Asp Gly Ser Val Arg Tyr Pro Ile Ser  
 305 310 315 320  
 Arg Pro Arg Lys Arg Cys Ser Pro Asn Glu Ala Ala Val Arg Phe Val  
 325 330 335  
 Gly Phe Pro Asp Lys Lys His Lys Leu Tyr Gly Val Tyr Cys Phe Arg  
 340 345 350  
 Ala Tyr Asn  
 355

<210> 10  
 <211> 1259  
 <212> DNA  
 <213> Homo sapiens

<220>  
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 <222> (199)..(1257)

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<220>  
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<220>  
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 <223> n equals a, t, g or c

<220>  
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 <223> n equals a, t, g or c

<220>  
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 <223> n equals a, t, g or c

<220>  
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 <223> n equals a, t, g or c

<220>  
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 <223> n equals a, t, g or c

<220>  
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 <223> n equals a, t, g or c

<220>  
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<220>  
 <221> misc\_feature  
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 gccagatgct cccagaaggg cacgaaggtc tcctgcagct gccagaaggg atacaaaggg 120  
 gacgggcaca gctgcacaga gatagacccc tgtgcagacg gccttaacgg aggggtgtcac 180  
 gagcacgcca cctgtaag atg aca ggc cgc ggc aag cac aag tgt gag tgt 231  
                   Met Thr Gly Pro Gly Lys His Lys Cys Glu Cys  
                   1                  5                  10  
 aaa agt cac tat gtc gga gat ggg ctg aac tgt gag ccg gag cag ctg 279  
 Lys Ser His Tyr Val Gly Asp Gly Leu Asn Cys Glu Pro Glu Gln Leu  
                   15                  20                  25

ccc att gac cgc tgc tta cag gac aat ggg cag tgc cat gca gac gcc 327  
 Pro Ile Asp Arg Cys Leu Gln Asp Asn Gly Gln Cys His Ala Asp Ala  
 30 35 40

aaa tgt gtc gac ctc cac ttc cag gat acc act gtt ggg gtg ttc cat 375  
 Lys Cys Val Asp Leu His Phe Gln Asp Thr Thr Val Gly Val Phe His  
 45 50 55

cta cgc tcc cca ctg ggc cag tat aag ctg acc ttt gac aaa gcc aga 423  
 Leu Arg Ser Pro Leu Gly Gln Tyr Lys Leu Thr Phe Asp Lys Ala Arg  
 60 65 70 75

gag gcc tgt gcc aac gaa gct gcg acc atg gca acc tac aac cag ctc 471  
 Glu Ala Cys Ala Asn Glu Ala Ala Thr Met Ala Thr Tyr Asn Gln Leu  
 80 85 90

tcc tat nnc cag aag gcc aag tac cac ctg tgc tca gca ggc tgg ctg 519  
 Ser Tyr Xaa Gln Lys Ala Lys Tyr His Leu Cys Ser Ala Gly Trp Leu  
 95 100 105

gag acc ggg cgg gtt gcc tac ccc aca gcc ttc gcc tcc cag aac tgt 567  
 Glu Thr Gly Arg Val Ala Tyr Pro Thr Ala Phe Ala Ser Gln Asn Cys  
 110 115 120

ggc tct ggt gtg gtt ggg ata gtg gac tat gga cct aga ccc aac aag 615  
 Gly Ser Gly Val Val Gly Ile Val Asp Tyr Gly Pro Arg Pro Asn Lys  
 125 130 135

agt gaa atg tgg gat gtc ttc tgc tat cgg atg aaa gat gtg aac tgc 663  
 Ser Glu Met Trp Asp Val Phe Cys Tyr Arg Met Lys Asp Val Asn Cys  
 140 145 150 155

acc tnc aag gtg ggc tat gtg gga gat ggc ttc tca tac agt ggg aac 711  
 Thr Xaa Lys Val Gly Tyr Val Gly Asp Gly Phe Ser Tyr Ser Gly Asn  
 160 165 170

ctg ctg cag gtc ctg atg tcc ttc ccc tca ctc aca aac ttc ctg acg 759  
 Leu Leu Gln Val Leu Met Ser Phe Pro Ser Leu Thr Asn Phe Leu Thr  
 175 180 185

gaa gtg ctg gcc tat tcc aac agc tca gct cga ggc cgt gca ttt cta 807  
 Glu Val Leu Ala Tyr Ser Asn Ser Ser Ala Arg Gly Arg Ala Phe Leu  
 190 195 200

gaa cac ctg act gac ctg tcc atc cgc ggc acc ctc ttt gtn cca cag 855  
 Glu His Leu Thr Asp Leu Ser Ile Arg Gly Thr Leu Phe Xaa Pro Gln  
 205 210 215

aac agt ggg ctg ggg gag aat gag acc ttg tct ggg cgg gac atc gag 903  
 Asn Ser Gly Leu Gly Glu Asn Glu Thr Leu Ser Gly Arg Asp Ile Glu  
 220 225 230 235

cac cac ctc gcc aat gtc agc atg ttt ttc tac aat gac ctt gtc aat 951  
 His His Leu Ala Asn Val Ser Met Phe Phe Tyr Asn Asp Leu Val Asn  
 240 245 250

ggc acc acc ctg caa acg agg ctg gga agc aag ctg ctc atc act gac 999  
 Gly Thr Thr Leu Gln Thr Arg Leu Gly Ser Lys Leu Leu Ile Thr Asp

[illegible]



Val Phe Cys Tyr Arg Met Lys Asp Val Asn Cys Thr Xaa Lys Val Gly  
 145 150 155 160  
 Tyr Val Gly Asp Gly Phe Ser Tyr Ser Gly Asn Leu Leu Gln Val Leu  
 165 170 175  
 Met Ser Phe Pro Ser Leu Thr Asn Phe Leu Thr Glu Val Leu Ala Tyr  
 180 185 190  
 Ser Asn Ser Ser Ala Arg Gly Arg Ala Phe Leu Glu His Leu Thr Asp  
 195 200 205  
 Leu Ser Ile Arg Gly Thr Leu Phe Xaa Pro Gln Asn Ser Gly Leu Gly  
 210 215 220  
 Glu Asn Glu Thr Leu Ser Gly Arg Asp Ile Glu His His Leu Ala Asn  
 225 230 235 240  
 Val Ser Met Phe Phe Tyr Asn Asp Leu Val Asn Gly Thr Thr Leu Gln  
 245 250 255  
 Thr Arg Leu Gly Ser Lys Leu Leu Ile Thr Asp Arg Gln Asp Pro Leu  
 260 265 270  
 His Pro Thr Glu Thr Arg Cys Val Asp Gly Arg Asp Thr Leu Glu Trp  
 275 280 285  
 Asp Ile Cys Ala Ser Asn Gly Ile Thr His Val Ile Ser Arg Xaa Leu  
 290 295 300  
 Lys Ala Pro Pro Ala Pro Val Thr Leu Xaa His Thr Xaa Leu Gly Xaa  
 305 310 315 320  
 Gly Ile Phe Xaa Xaa Ile Ile Leu Val Thr Gly Ala Val Ala Leu Ala  
 325 330 335  
 Ala Tyr Ser Tyr Phe Arg Ile Asn Arg Lys Thr Ile Gly Phe Xaa His  
 340 345 350

Phe

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 <211> 275  
 <212> PRT  
 <213> Mus musculus

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 Gly Trp Gly Phe Lys Asn Gly Ile Phe His Asn Ser Ile Trp Leu Glu  
 20 25 30  
 Gln Ala Ala Gly Val Tyr His Arg Glu Ala Arg Ala Gly Arg Tyr Lys  
 35 40 45

Leu Thr Tyr Ala Glu Ala Lys Ala Val Cys Glu Phe Glu Gly Gly Arg  
 50 55 60  
 Leu Ala Thr Tyr Lys Gln Leu Glu Ala Ala Arg Lys Ile Gly Phe His  
 65 70 75 80  
 Val Cys Ala Ala Gly Trp Met Ala Lys Gly Arg Val Gly Tyr Pro Ile  
 85 90 95  
 Val Lys Pro Gly Pro Asn Cys Gly Phe Gly Lys Thr Gly Ile Ile Asp  
 100 105 110  
 Tyr Gly Ile Arg Leu Asn Arg Ser Glu Arg Trp Asp Ala Tyr Cys Tyr  
 115 120 125  
 Asn Pro His Ala Lys Glu Cys Gly Gly Val Phe Thr Asp Pro Lys Arg  
 130 135 140  
 Ile Phe Lys Ser Pro Gly Phe Pro Asn Glu Tyr Asp Asp Asn Gln Val  
 145 150 155 160  
 Cys Tyr Trp His Ile Arg Leu Lys Tyr Gly Gln Arg Ile His Leu Ser  
 165 170 175  
 Phe Leu Asp Phe Asp Leu Glu His Asp Pro Gly Cys Leu Ala Asp Tyr  
 180 185 190  
 Val Glu Ile Tyr Asp Ser Tyr Asp Asp Val His Gly Phe Val Gly Arg  
 195 200 205  
 Tyr Cys Gly Asp Glu Leu Pro Glu Asp Ile Ile Ser Thr Gly Asn Val  
 210 215 220  
 Met Thr Leu Lys Phe Leu Ser Asp Ala Ser Val Thr Ala Gly Gly Phe  
 225 230 235 240  
 Gln Ile Lys Tyr Val Thr Val Asp Pro Ala Ser Lys Ser Ser Gln Ala  
 245 250 255  
 Lys Asn Thr Ser Thr Thr Gly Asn Lys Lys Phe Leu Pro Gly Arg Phe  
 260 265 270  
 Ser His Leu  
 275

<210> 13  
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44

<210> 14  
 <211> 44  
 <212> DNA  
 <213> Homo sapiens

<400> 14  
gcagcatcta gatcacttga ctgtgaggat cctctgggtg tcag 44

<210> 15  
<211> 45  
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<400> 15  
gcagcaggat ccatgggtcac ttgtacctgc ctgcccgact acgag 45

<210> 16  
<211> 45  
<212> DNA  
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<400> 16  
gcagcaggat ccatgggtcac ttgtacctgc ctgcccgact acgag 45

<210> 17  
<211> 48  
<212> DNA  
<213> Homo sapiens

<400> 17  
gcagcaggat ccatgggcct gttgtcctg gteccattgc tctgctg 48

<210> 18  
<211> 46  
<212> DNA  
<213> Homo sapiens

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<223> n equals a, t, g or c

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<210> 19  
<211> 44  
<212> DNA  
<213> Homo sapiens

<400> 19  
gcagcaggat ccatgacagg cccgggcaag cacaagtgtg agtg 44

<210> 20  
<211> 49  
<212> DNA  
<213> Homo sapiens

<220>  
<221> misc\_feature  
<222> (21)  
<223> n equals a, t, g or c

<400> 20  
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<210> 21  
<211> 50  
<212> DNA  
<213> Homo sapiens

<400> 21  
gcagcaagat ctgccatcat gatggaccag ggctgccggg aaatccttac 50

<210> 22  
<211> 45  
<212> DNA  
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<400> 22  
gcagcatcta gatcacttga ctgtgaggat cctctgggtg tcagg 45

<210> 23  
<211> 51  
<212> DNA  
<213> Homo sapiens

<400> 23  
gcagcaagat ctgccatcat ggtcacttgt acctgcctgc ccgactacga g 51

<210> 24  
<211> 45  
<212> DNA  
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<400> 24  
gcagcatcta gatcacttga ctgtgaggat cctctgggtg tcagg 45

<210> 25  
<211> 54  
<212> DNA  
<213> Homo sapiens

<400> 25  
gcagcaagat ctgccatcat gggcctgttg ctctgggtcc cattgctcct gctg 54

<210> 26  
<211> 46  
<212> DNA  
<213> Homo sapiens

<220>  
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<210> 27  
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<400> 27  
 gcagcaagat ctgccatcat gacaggcccg ggcaagcaca agtgtgagtg 50

<210> 28  
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<220>  
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<210> 29  
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<210> 30  
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<400> 30  
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<210> 31  
 <211> 54  
 <212> DNA  
 <213> Homo sapiens

<400> 31  
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<400> 32  
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<400> 33  
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<220>
<221> misc_feature
<222> (40)
<223> n equals a, t, g or c
```

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<400> 35  
gcagcaagat ctgccatcat gacaggcccc ggcaagcaca agtgtgagtg 50

```
<220>
<221> misc_feature
<222> (21)
<223> n equals a, t, g or c
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<400> 36  
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<210> 37
<211> 733
<212> DNA
<213> Homo sapiens
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&lt;400&gt; 37

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